



# Soil and Materials Engineers, Inc.

## offices



### CORPORATE OFFICE

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Gerald M. Belian, PE

### GRAND RAPIDS

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### BAY CITY

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Larry P. Jedele, PE

## website

[www.sme-usa.com](http://www.sme-usa.com)

## founder

Kenneth W. Kramer, PE, Chairman Emeritus

## principals

**PRESIDENT** Mark K. Kramer, PE

Timothy H. Bedenis, PE  
Gerald M. Belian, PE  
Frank A. Henderson, PG  
Larry P. Jedele, PE  
Starr D. Kohn, PhD, PE

Edward S. Lindow, PE  
Gerard P. Madej, PE  
Truman F. Maxwell, CPA  
Robert C. Rabeler, PE

## team members

210

## projects completed

44,000

## professional staff

Geotechnical Engineers  
Hydrogeologists  
Materials Consultants  
Civil Engineers  
Environmental Engineers  
Forensic Engineers

Pavement Engineers  
Roofing Consultants  
Metals Consultants  
Geologists/Geological Engineers  
Certified Industrial Hygienist  
Facility Engineers

## technical staff

Restoration Specialists  
Qualified Concrete Technicians  
Certified Bituminous Plant Inspectors  
Certified Aggregate Inspectors  
Certified Welding Inspectors

Coating Specialists  
Certified Masonry Inspectors  
NICET Engineering Technicians  
Roofing and Pavement Specialists  
Asbestos Specialists

consultants in the geosciences, materials and the environment

### Engineering evaluation and design for soil, rock and groundwater conditions.

**Caissons/Piles:** Design, wave equation analysis, load and integrity tests, and construction observation.

**Corrosion:** Perform and evaluate field and laboratory tests for corrosivity of buried metallic structures, and design of corrosion prevention systems.

**Dewatering:** Observe and model groundwater flow, field pump tests, and design temporary and permanent dewatering systems.

**Drilling:** Soil borings, specialized sampling, in-situ testing (pressuremeter, Dutch cone, dilatometer, vane shear), monitoring wells, and Geoprobos.

**Earth Retention Systems:** Design of temporary and permanent earth retention systems including reinforced earth/geogrid walls, tiebacks, shoring and bracing.

**Foundation Engineering:** Design including foundation type, bearing elevation, bearing pressure, estimated settlement, and underpinning design.

**Geodynamics/Vibrations:** Measure ambient vibrations, seismic, crosshole, downhole, attenuation, refraction surveys, evaluate existing foundations and design new foundations.

**Geophysical Surveys:** Including electrical resistivity, seismic, borehole logging, EM, gravity, and ground penetrating radar.

**Geosynthetics:** Design of geosynthetic-based systems, such as reinforced earth walls, and slopes and erosion protection for landfills, pavements, and special applications.

**Ground Modification:** Design of special techniques to improve soil, including wick drains, surcharging, vibroflotation, deep dynamic compaction, grouting, and surface compaction.

**Instrumentation:** Installation and monitoring (manual and remote) for in-situ determination of soil and rock properties and performance during construction.

**Slope Stability:** Design for stabilization of existing and proposed slopes, and design repair of failed slopes.

### Engineering evaluation of material properties, failure analyses, and design using life-cycle costs.

**Coatings:** Evaluation, selection, construction monitoring, and failure analysis for steel, concrete and wood construction.

**Concrete:** Construction monitoring, strength evaluation using destructive and nondestructive testing, flat floor measurements, corrosion, and durability evaluations.

**Construction Materials Services:** Monitor construction procedures and material properties for conformance to specifications, and total quality control/quality assurance plans.

**Facility Asset Management:** Evaluation of building components and systems, and design of maintenance management programs.

**Forensic Engineering:** Expert witnesses who develop alternative dispute resolution strategies by researching facts, explaining complex technical issues, and conveying expert opinions involving issues in the built environment.

**Masonry/Stone:** Construction monitoring, material evaluation, and full scale testing.

**Metals:** Failure analysis, material characterization, and welding and jointing design.

**Pavements:** Evaluation of existing pavements and subgrade conditions, including use of falling weight deflectometer (FWD) and other specialized equipment. Pavement design, construction monitoring, and maintenance management programs.

**Restoration:** Condition assessment, and development of building and infrastructure improvements.

**Roofs:** Evaluation of existing roofs including use of infrared technology, design of rehabilitation systems, new roof design, construction monitoring, and roof maintenance management programs.

**Sealants/Waterproofing:** Design and evaluation of moisture management systems for new construction and building restoration.

**Structural Steel:** Shop and site monitoring including bolted and welded connections, coatings, shear studs, use of ultrasonic, radiographic magnetic particle, and nondestructive testing.

### Environmental assessment, contamination evaluation, remediation, and regulatory compliance.

**Air Quality:** Emission inventories, source sampling, screening models and permits.

**Asbestos/Lead-Based Paint:** Assessment of hazardous materials, abatement specifications, and project monitoring.

**BEA/Due Care:** Perform Baseline Environmental Assessments, prepare Due Care plans, observe construction, and monitor Due Care implementation.

**Brownfield Development:** Environmental/geotechnical evaluations for redevelopment, prepare workplans and assist with funding alternatives. Provide construction observation, testing, and Due Care implementation.

**Environmental Site Assessments:** Phase I/II ESAs for all types of property transactions, including multi-site and large industrial projects.

**Hydrogeologic Studies:** Evaluation of geologic conditions, aquifer flow characterization, groundwater quality, and well field studies.

**Industrial Hygiene/Mold/Indoor Air Quality:** Exposure assessments, and health and safety programs.

**Landfills:** Site evaluation, monitoring programs, leachate containment, stabilization of excavations and construction slopes, and remediation systems.

**Regulatory Compliance:** Compliance auditing, ISO 14001 implementation, pollution prevention, TRI reporting, spill planning and permits.

**Remediation:** Assess type/extent of contamination, evaluate remedial alternatives, remediation design, monitor remediation system installation, and provide operation and maintenance for treatment systems.

**Risk Assessment:** Identify hazards, assess exposure, characterize risk and evaluate site cleanup levels.

**Storm Water Management:** Outfall identification, sampling programs, permits, and certified operator monitoring at construction and industrial sites.

**USTs:** Manage removal of USTs, closure of UST systems, and implementation of Risk-Based Corrective Action (RBCA).